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September 7, 1995

**VIA HAND DELIVERY**

Mr. William F. Caton  
Acting Secretary  
Federal Communications Commission  
1919 M Street, N.W. - Room 222  
Washington, D.C. 20554

DOCKET FILE COPY ORIGINAL

Re: CC Docket No. 92-297

Dear Mr. Caton:

On behalf of the Fixed Point-to-Point Communications Section, Network Equipment Division of the Telecommunications Industry Association, we are filing an original and seven (7) copies of its Comments on Third Notice of Proposed Rulemaking in the above-referenced matter.

If there are any questions, please communicate with the undersigned.

Respectfully submitted,

FLETCHER, HEALD & HILDRETH, P.L.C.

*Leonard Robert Raish*

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For the Fixed Point-to-Point Communications  
Section, Network Equipment Division of the  
Telecommunications Industry Association

LRR:cej  
Enclosures

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BEFORE THE

**Federal Communications Commission**

WASHINGTON, D.C. 20554

In the Matter of )

)  
Rulemaking to Amend Parts 1, 2, 21, and 25 )  
of the Commission's Rules to Redesignate )  
the 27.5 - 29.5 GHz Frequency Band, to )  
Reallocate the 29.5 - 30.0 GHz Frequency )  
Band, to Establish Rules and Policies for )  
Local Multipoint Distribution Service and )  
for Fixed Satellite Services )

CC Docket No. 92-297

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**COMMENTS ON THIRD NOTICE OF PROPOSED RULEMAKING**

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Dated: September 7, 1995

## TABLE OF CONTENTS

	PAGE
SUMMARY.....	i
COMMENTS ON THIRD NOTICE OF PROPOSED RULEMAKING.....	1
I. SPECTRUM ALLOCATED FOR FIXED SERVICE IS BEING DIVERTED FOR OTHER USES. ....	2
II. THE POSITIONS PRESENTED BY THE MICROWAVE EQUIPMENT MANUFACTURERS.....	4
III. THE COMMISSION'S PROPOSED RULES ARE ARBITRARY AND CAPRICIOUS.....	9
IV. THE COMMISSION'S "SOLUTION" FOR POINT-TO-POINT MICROWAVE USERS WILL NOT WORK.....	12
V. THE COMMISSION SHOULD DEDICATE 500 MHZ OF THE 28 GHZ BAND TO POINT-TO-POINT MICROWAVE SERVICES ON A SHARED, CO-PRIMARY BASIS WITH FSS AND MSS SERVICES.....	14
A. THE ALLOCATION OF A PORTION OF THE 28 GHZ BAND FOR MICROWAVE USE WILL SERVE THE PUBLIC INTEREST.....	14
B. THE ALLOCATION OF A PORTION OF THE 28 GHZ BAND TO TRADITIONAL MICROWAVE LICENSEES WILL NOT ADVERSELY AFFECT THE FSS, MSS, OR LMDS INDUSTRIES.....	17
VI. SHARED USE WITH LMDS.....	17
VII. CONCLUSION.....	18

## EXECUTIVE SUMMARY

In its *Third Notice of Proposed Rulemaking* in this proceeding, the Commission has proposed to effectively exclude from the 28 GHz band terrestrial microwave services which have shared these frequencies with satellite users on a co-primary basis for over 30 years.

The Commission's tentative decision grossly distorts the record in this proceeding, contravenes the public interest, and is arbitrary and capricious. On the basis of a 1991 ruling, the Commission concludes that "we have made sufficient point-to-point spectrum available for support of wired and wireless telecommunications systems for the present." *Third Notice*, para. 53. In fact, however, the amount of spectrum available for short-haul microwave services has steadily diminished over the past four years just as the critical need for such services has climbed. Traditional short haul private operational microwave remains extremely important to commerce and its uses continue to expand, sponsored, in part, by significant structural changes in such basic industries as banking and health care. Over the next decade, moreover, microwave facilities on frequencies above the 12 GHz band will provide essential links for PCS backbone networks, local area and competitive access network interconnections, SONET/ATM access networks and ring closures, and other advanced technology applications.

Each of these existing and emerging industries will, in turn, need to compete for microwave spectrum with incumbent 2 GHz and 12 GHz microwave licensees, which the Commission has displaced to higher frequencies. Already, many suitable frequencies are heavily congested, or threaten to become so in the very near future. The Commission has ignored these industry trends, as well as the results of its own administrative actions.

In anticipation of this problem, four years ago representatives of the short-haul microwave industry petitioned the Commission to amend its rules to adopt a channelization plan for the 28 GHz band that would permit manufacturers to design standardized internationally accepted equipment, and to make that band available for assignment, on a shared, co-primary basis, with satellite users. The Commission's failure to act on those petitions has artificially frozen short haul microwave use of the 28 GHz band by preventing carriers and users from seeking licenses, and thereby aggravated the congestion on other short-haul frequencies.

In its *Third Notice*, the Commission also distorts the record in this proceeding by grossly mischaracterizing the relief that the microwave industry has sought. Contrary to the Commission's tentative finding, no microwave interests in this proceeding have ever sought "to dedicate part or all of the 28 GHz band solely to point-to-point services," or to otherwise undercut the co-primary status of satellite users. Nor have microwave interests ever alleged, as claimed by the Commission, that the public interest in microwave service outweighs other interests. *Third Notice*, para. 52. Throughout this proceeding, microwave interests have, rather, sought to preserve part of their allocation on the 28 GHz band on a compatible shared, co-primary basis, with other users.

In its dismissal of the mounting need for short-haul microwave facilities, the Commission compounds its errors by proposing a variety of remedies -- ranging from geographic partitioning and spectrum aggregation to the lease of spectrum from third parties -- for "entities interested in providing point-to-point services." In fact, each of these proposed solutions is unworkable and fails to meet the critical needs of the microwave industry and the ancillary industries it serves.

The record in this proceeding clearly supports the sharing of a portion of the 28 GHz band, on a co-primary basis, by fixed microwave service with FSS and MSS (specifically the 500 MHz 28.35-28.6 GHz and 29.25-29.5 GHz) and with LMDS Backbone Link Service (specifically, the 300 MHz 28.2-28.35 GHz and 29.1-29.25 GHz).

BEFORE THE

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WASHINGTON, D.C. 20554

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Rulemaking to Amend Parts 1, 2, 21 and 25	)	CC Docket No. 92-297
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Reallocate the 29.5 - 30.0 GHz Frequency	)	
Band, to Establish Rules and Policies for	)	
Local Multipoint Distribution Service and	)	
for Fixed Satellite Services	)	

## COMMENTS ON THIRD NOTICE OF PROPOSED RULEMAKING

Pursuant to Section 1.415 of the Commission's rules, 47 C.F.R. § 1.415, the Fixed Point-to-Point Communications Section, Network Equipment Division of the Telecommunications Industry Association ("TIA")<sup>1</sup> hereby submits its comments on the Commission's *Third Notice of Proposed Rulemaking* in the above-captioned proceeding, FCC 95-287, released July 28, 1995 ("*Third Notice*").<sup>2</sup> For the reasons set forth herein, TIA strongly protests the Commission's summary treatment of submissions made by representatives of the terrestrial microwave industry in this proceeding, and the Commission's tentative decision to ignore the mounting demand for spectrum, both to serve the communications requirements of developing commercial mobile radio services and the competitive access industry, and to accommodate traditional private operational and

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<sup>1</sup> TIA is the principal industry association representing fixed point-to-point microwave radio manufacturers. TIA members supply equipment to, among others, companies, including telephone carriers, utilities, railroads, state and local governments, and cellular carriers, licensed by the Commission to use private and common carrier bands for provision of important and essential telecommunications services

<sup>2</sup> By Order of the International Bureau, the date for filing comments was extended to September 7, 1995. DA 95-1866, released August 25, 1995.

common carrier fixed microwave users displaced from other frequency bands by prior Commission orders. TIA respectfully urges the Commission to revise its proposed 28 GHz band segmentation plan in part by (i) allocating 500 MHz of the 28 GHz band (28.35 - 28.6 GHz and 29.25 - 29.5 GHz) to point-to-point microwave services on a shared, co-primary basis with FSS and MSS services and (ii) allocating 300 MHz of the 1,000 MHz proposed to be assigned to LMDS (28.2 - 28.35 GHz and 29.1 - 29.25 GHz) specifically for LMDS Backbone Link Service and to point-to-point microwave services on a shared, co-primary basis.

I. Spectrum Allocated for Fixed Service Is Being Diverted for Other Uses

The 27.5 - 29.5 GHz ("28 GHz") band is one of five frequency bands available for short-haul microwave use, all on a shared, co-equal basis.<sup>3 4</sup> In many urban areas, most of these bands are currently congested, or threatened to be so, in the very near future.<sup>5</sup>

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<sup>3</sup> 47 C.F.R. § 2.106. In addition to the 28 GHz band, the remaining frequency bands are: 17.8 - 19.7 GHz ("18 GHz"); 21.2 - 23.6 GHz ("23 GHz"); 31.0 - 31.3 GHz ("31 GHz"); and 38.6 - 40.0 GHz ("38 GHz").

<sup>4</sup> Since 1979, the 28 GHz band has been allocated by the ITU, co-primary, to fixed and fixed satellite, earth-to-space, for Regions 2 and 3. In Region 1, the ITU allocation is for fixed and mobile only. In the U.S., the band is allocated to the Domestic Fixed Service. Interested parties had always regarded the 28 GHz band as a "growth band" for terrestrial point-to-point service.

<sup>5</sup> For example, in the 18 GHz band, in addition to fixed microwave, domestic public point-to-point, fixed satellite (earth to space and space to earth), broadcast auxiliary, cable television service, video distribution, digital electronic message service, digital termination service and MDS links are authorized. *See*, 47 C.F.R. § 2.106, 47 C.F.R. § 21.100 and 47 C.F.R. §§ 94.61 *et seq.* Some of these uses were recently authorized. For example, video distribution was added in 1991, *Report and Order, Amendment of Part 94 of the Commission's Rules to Permit Private Video Distribution Systems of Video Entertainment Access to the 18 GHz Band*, 6 FCC Rcd 1270. More recently, the 18 GHz band was also made available on a primary basis to the government for space to earth fixed satellite communications. *Memorandum Opinion and Order, Amendment of Part 2 of the Commission's Rules to Allocate Spectrum for the Fixed-Satellite Service in the 17.8 - 20.2 GHz Band for Government Use*, FCC 95-316, released July 31, 1995.



*See, e.g., Public Notice: Common Carrier Bureau Established Policy Governing the Assignment of Frequencies in the 38 GHz and Other Bands to be Used in Conjunction With PCS Support Communications*, 75 R.R. 2d 1341 (1994).

The reduced availability of spectrum for short-haul microwave point-to-point services comes at a time when the critical need for such services is on the rise. Microwave facilities on frequencies above 12 GHz will provide critical links for PCS backbone networks; local area network interconnections; SONET/ATM access network and ring closures; and other advanced technology applications. Dozens of entities have already applied for microwave spectrum, particularly in the 38 GHz band, for short haul links to service those needs in the new wireless mobile telecommunications and competitive access industries, and the demand for such service will inevitably explode once those industries begin to develop fully. Traditional short haul private operational microwave, likewise, remains extremely important to commerce and its uses continue to expand, sponsored, in part, by significant structural changes in such basic industries as banking and health care. Utilities are significantly expanding and enhancing their telecommunications facilities with fiber and microwave to provide for their growing communications network needs, including the interconnection of hundreds of decentralized LANs supporting thousand of ever more powerful work stations. The utilities are also undertaking major expansion of their telecommunications services in order to offer services to the public as a competitive common carrier. *Toward 2000 - The Application of SONET Transport Microwave Radio to Utilities Telecom Networks*, K. Bromberg, R. Laine, R. Lunan and B. Johnson (August 3, 1995) at 1-2.

Competing with these new entrants and traditional users will be hundreds of existing

licensees in the 2 GHz band who will need to relocate their facilities to make way for PCS and other new technologies. *Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies*, 8 FCC Rcd 6495, 6519-6520 (1993), *modified*, 9 FCC Rcd 1943 (1994). Also competing for the limited microwave spectrum will be the present users in the 12.2 to 12.7 GHz band who are being displaced by growing numbers of direct broadcast satellite subscribers and must find a new home. *Direct Broadcast Satellite*, 90 FCC 2d 676 (1982), *recon. denied*, 53 RR 2d 1637 (1983). Since 1983, fixed services have lost their co-primary status on these other bands and, for those bands where fixed services are still permitted, increased congestion has resulted from sharing with additional authorized uses. In addition to the diversions of spectrum for point-to-point use referenced in footnote 5 hereto, the Commission now proposes to accommodate MSS earth to space service in the upper 6 GHz, 11 GHz and 18 GHz spectrum previously available only for compatible MSS space to earth and fixed uses. See, *U.S. Proposals WRC-95* at 170. Finally, in the 23 GHz band, the usefulness of the 23.0 -23.55 GHz segment to terrestrial point-to-point is coming into question as a result of new interest in operating inter-satellite links for the big LEO and little LEO proposals, FSS and broadcast satellites. It is obvious that this pattern of loss of spectrum for point-to-point services is now proposed for extension to the 28 GHz band.

## II. The Positions Presented by the Microwave Equipment Manufacturers

In anticipation of this growing demand, on April 19, 1991, Harris Corporation-Farion Division ("Harris"), one of the nation's leading manufacturers of digital microwave equipment, filed a Petition for Rulemaking ("Harris Petition") to amend Parts 2, 21 and 94 of the Commission's rules to adopt a channelization plan for the 28 GHz band that would permit manufacturers to design standardized internationally accepted equipment, and to

make that band available for assignment under Part 94 of the Commission's rules, in addition to Part 21 in which it was already available. In its Petition, Harris cited statements by Pacific Bell and other carriers that the availability of spectrum in the 28 GHz band was "essential to the continued growth of basic telephone service and other common carrier services." Harris Petition, p. 6.<sup>6</sup> In the absence of a channelization plan, however, Harris noted that it was "difficult for manufacturers to design and put equipment on the market because of uncertainty as to channel pairings, bandwidths, channel spacings, etc. This, in turn, [made] it difficult for users to plan to use the band because of uncertainty as to the availability and cost of equipment." Harris Petition, pp. 6-7. Harris also noted that "a channelization plan would ensure that channel assignments are consistent with the Commission's goal of maximizing spectrum efficiency." Harris Petition, p. 7. Nowhere in its Petition did Harris ask the Commission to allocate the 28 GHz band to fixed point-to-point microwave services on an exclusive basis or to otherwise restrict the existing co-primary rights of satellite users on that band.

Nearly two years later in this Docket, in the *Notice of Proposed Rulemaking, Order, Tentative Decision and Order on Reconsideration*, 8 FCC Rcd 557 (1993) ("*First Notice*"), the Commission brushed these facts aside and tentatively concluded that the 28 GHz band should be redesignated to accommodate Local Multipoint Distribution Services ("LMDS") that would be licensed in two 1000 MHz blocks for each market. The Commission also requested comment from satellite entities regarding the effect of this redesignation and the

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<sup>6</sup> In its *First Notice of Proposed Rulemaking* in this proceeding, the Commission swept aside this showing, and Harris' own status as a leading manufacturer of digital microwave equipment, by stating that "Harris provides no evidence of either manufacturer or subscriber interest in the 28 GHz band for conventional private or common carrier point-to-point use. . . ." *First Notice*, 8 FCC Rcd 557, 559 (1993), para. 12

proposed rules on any planned satellite use of the band.

In response to the *First Notice*, Digital Microwave Corporation ("DMC"), another major manufacturer of digital microwave equipment, reminded the Commission of the concerns initially advanced by Harris. While recognizing the potential public interest benefits of LMDS, DMC urged the Commission to preserve at least 500 MHz of spectrum in the 28 GHz band for common carrier and private point-to-point communications services, to meet the readily predictable growth in demand for support services for cellular telephone service, PCS, and other short haul, high capacity communications requirements. DMC Comments, filed March 16, 1993, p. 2. In Reply Comments, DMC joined other commenters in opposing designation of the entire 28 GHz band solely for LMDS use and advised the Commission that it would be imprudent to foreclose the co-primary use of the band for point-to-point microwave services in contravention of international spectrum allocations. DMC Reply Comments, filed April 15, 1993.

In the *Second Notice of Proposed Rulemaking* in this docket, 9 FCC Rcd 1394 (1994) ("*Second Notice*"), the Commission ignored and did not address the issues raised by DMC, but modified its initial proposal to allow both LMDS and satellite providers to co-exist in the 28 GHz band. The Commission's failure to include, or at least discuss, fixed service uses compatible with the proposed satellite and LMDS allocations was clearly arbitrary and capricious. In order to develop regulations for the use of the band, the Commission established a Negotiated Rulemaking Committee ("NRMC") with participants from different sectors of the telecommunications industry. The Commission asked the NRMC to propose specific rules to effectuate a sharing plan, with an analysis of how benefits of its proposed solution outweigh other options for accommodating these services. The Commission also indicated that it would make its ultimate selection among service

proposals on the basis of certain factors, including economic growth potential and other public interest concerns that may not be readily calculable in economic terms. *Second Notice*, 9 FCC Rcd at 1400-1401.

The NRMC met between July 26, 1994 and September 23, 1994. Among the committee's members was a representative of Harris and DMC, who spoke for terrestrial fixed microwave interests. The majority of the NRMC's other members were representatives of the LMDS and FSS industries.

Pursuant to a meeting of the NRMC held August 5, 1994, the joint representative of Harris and DMC submitted to the committee a Statement Regarding Terrestrial Fixed Microwave Telecommunications, NRMC No. 33 ("Joint Statement").<sup>7</sup> In their Joint Statement, Harris/DMC reiterated the need for a terrestrial point-to-point microwave allocation in the 28 GHz band to accommodate new technologies, and to support the continued allocation of the 28 GHz band for fixed use internationally. Harris/DMC further demonstrated that proposed LMDS systems did not offer an acceptable substitute for point-to-point microwave requirements, and urged the NRMC to advise the FCC of the ability of the 28 GHz band to be shared by fixed microwave and FSS users. By letter submitted to the NRMC and to the Commission on August 22, 1994, TIA supported the Harris/DMC Joint Statement.<sup>8</sup>

In its Report to the Commission, filed September 23, 1994, the NRMC cited, but otherwise ignored, the Harris/DMC Joint Statement. Nowhere in its Report did the NRMC address any of the issues and concerns raised by Harris and DMC during the negotiated

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<sup>7</sup> A copy of the Joint Statement, which the NRMC cited but did not include in its Report to the Commission, is attached hereto as Exhibit A.

<sup>8</sup> A copy of TIA's letter is attached hereto as Exhibit B.

rulemaking, or offer any recommendations regarding the needs of the point-to-point microwave industry.<sup>9</sup>

The only positions of the fixed microwave industry contained in the Final Report are two Statements by Harris and DMC attached as Addenda.<sup>10</sup> In their Addenda, Harris and DMC reiterated their concerns and urged the NRMC to address the bona fide requirements of traditional terrestrial fixed communications in the 28 GHz band that could not be accommodated through LMDS. In the event the NRMC recommended allocation of LMDS to the 28 GHz band, Harris and DMC specifically urged the Commission to reduce the LMDS allocation to a 1000 MHz allocation made up of two 500 MHz blocks (specifically, 28.0 - 28.5 GHz and 29.0 - 29.5 GHz); permit traditional terrestrial microwave licensees and FSS operators to share the 27.5 - 28.0 GHz and 28.5 - 29.0 GHz bands; and to place MSS feeder links in the 29.0 - 29.5 GHz band shared with LMDS.

Subsequently, in a Joint Petition for Rulemaking filed February 9, 1995, Harris and DMC asked the Commission to amend Parts 2, 21 and 94 of its rules to adopt a channelization plan for the 28 GHz band for licensing to fixed point-to-point microwave and fixed satellite systems on a shared, co-primary basis.

In its *Third Notice* in this proceeding, the Commission has again proposed to effectively exclude terrestrial microwave services from the 28 GHz band. Under its Band Segmentation Plan, portions of the 28 GHz would instead be allocated for LMDS, FSS

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<sup>9</sup> As a matter of fact, the "Facilitator" of the NRMC ruled that, since "traditional" point-to-point microwave was outside the Committee's terms of reference, the remedy for the proponents of those interests would be in the anticipated (and subsequently adopted) *Third Notice*. This point was included in the joint statements of Harris and DMC contained in the Addendum to the NRMC Report to the Commission

<sup>10</sup> Copies of the Addenda are attached hereto as Exhibits C and D.

systems and MSS feeder links. Entities interested in providing point-to-point services may, according to the Commission's proposal, "apply for LMDS spectrum themselves, they may seek geographic partitioning and/or spectrum disaggregation opportunities to the extent that these options are adopted in final LMDS rules, or they may lease spectrum from LMDS operators, to the extent permitted by our rules." *Third Notice*, para. 53.

In its *Third Notice*, the Commission cites the 1991 Harris Petition and the 1995 Joint Petition of Harris and DMC, but makes no reference at all to the submissions of these companies (and of TIA) to the NRMC, and ultimately mischaracterizes the relief the companies have sought for more than four years. The Commission states that it will "again decline to dedicate part or all of the 28 GHz band solely to point-to-point services, as requested by Harris and Digital." *Third Notice*, para. 52 (emphasis added). In fact, neither Harris nor DMC has ever requested the allocation of all or part of the 28 GHz band solely to point-to-point services; for the past four years both companies have consistently and solely sought channelization of the band on a co-primary, shared use basis with FSS.

### III. The Commission's Proposed Rules are Arbitrary and Capricious

It is well settled that the Commission's rulemaking function requires the agency to provide a reasoned analysis indicating that prior policies and standards are being deliberately changed, not casually ignored. *People of State of California v. FCC*, 39 F.3d 919 (9th Cir. 1994), *cert. denied*, \_\_\_ U.S. \_\_\_, 131 L Ed. 2d 309 (1995), *citing Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto Ins. Co.*, 468 U.S. 29, 43-44 (1983) ("*State Farm*"). The Commission must examine the relevant data and articulate a satisfactory explanation for its action, including a rational connection made between the facts found and the choice made. *State Farm*, 468 U.S. at 43. If the record reveals that the Commission has "failed to consider an important aspect of the problem" or has "offered an explanation

for its decision that runs counter to the evidence before [it]," its action will be rejected as arbitrary and capricious. *Id.*

In the instant proceeding, the Commission's decisions and proposed rules have consistently failed this fundamental test. In its *First*, *Second* and *Third Notices*, the Commission based its tentative decision to remove point-to-point fixed microwave services from its 28 GHz band allocation substantially on the ground that this band has lain fallow and no demand for fixed microwave services on the band has been shown. *First Notice*, 8 FCC Rcd at 559; *Second Notice*, 9 FCC Rcd at 1394; *Third Notice*, paras. 51-53. In fact, however, Harris and DMC have each made showings to the Commission regarding the surging demand for point-to-point microwave services to support PCS, competitive access, other new offerings since 1991.

The Commission's tentative decision also overlooks the impact its own prior rulings, or failure to act, have had on usage of the 28 GHz band by microwave carriers and other users. Clearly, as Harris and DMC have repeatedly reminded the Commission, its decision to relocate incumbent 2 GHz and 12 GHz microwave licensees to higher frequencies to make way for PCS and DBS, respectively, will inevitably increase demand on the 28 GHz and other bands. The Commission cannot ignore the fact that the expanded new service uses permitted in the upper 6 GHz, 11 GHz, 18 GHz and 23 GHz together with the demands for urban NII infrastructure makes point-to-point access to the 28 GHz band imperative.

Most critically, the Commission disregards the negative impact of its own administrative inaction. More than four years ago, Harris advised the Commission that the absence of a channelization plan for the 28 GHz band artificially chilled demand for these frequencies by preventing fixed microwave carriers and private users from seeking



licenses, and manufacturers from placing equipment on the market. For the Commission to justify the removal of microwave services from the 28 GHz band on the ground that no licenses have been granted for the spectrum stands logic on its head.

This "boot strap" argument is only available because the Commission refused to act on the pending requests of Harris and DMC to channelize the 28 GHz band for efficient use. These requests for channelization would have prescribed channel bandwidth and transmitter to receiver spacing consistent with ITU-R Recommendations and made U. S. manufactured equipment useful worldwide. In short, they sought nothing more than what the Commission regularly does for the microwave service in other frequency bands. See, for example, the channelization plan and technical rules prescribed by the Commission for the 4 GHz, 6 GHz, 10 GHz and 11 GHz bands in *Second Report and Order, Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies*, 8 FCC Rcd 6495, 6499-6511 (1993).

The Commission's summary dismissal of the petitions of the microwave industry also sadly reflects an apparent willingness to distort the record in this proceeding or, alternatively, a determined unwillingness to address the issues and concerns which the microwave industry has raised. As noted above, the Commission in its *Third Notice* grossly mischaracterizes the position which Harris and DMC have advanced. Far from seeking exclusive use of the 28 GHz band, as the Commission has found, both Harris and DMC have consistently sought a modest shared use of the spectrum as the Commission's long-standing allocation scheme contemplates. In the rush to exclude microwave services from its 28 GHz band allocation, one wonders whether the Commission's mischaracterization of the position of the microwave industry is deliberate or negligent.

In its *Third Notice*, the Commission further distorts the record in this proceeding by

suggesting that the microwave industry has claimed that the public interest in microwave outweighed other interests. *Third Notice*, para. 52. In fact, Harris and DMC have consistently maintained that the needs of fixed microwave, fixed satellite and LMDS interests are equally important, and that all should be accommodated. In any event, nothing in the record of this proceeding supports the counter-principle that interests of LMDS, satellite and feeder link operators outweigh those of the traditional microwave industry.

#### IV. The Commission's "Solution" for Point-to-Point Microwave Users Will Not Work

At paragraph 53 of its *Third Notice*, the Commission proposes a variety of remedies for "entities interested in providing point-to-point services." Such entities may, according to the Commission, "apply for LMDS spectrum themselves, they may seek geographic partitioning and/or spectrum disaggregation opportunities to the extent that these options are adopted in final LMDS rules, or they may lease spectrum from LMDS operators, to the extent permitted by our rules." Citing a 1991 ruling predating this proceeding, *Hye Crest Management, Inc.*, 6 FCC Rcd 332 (1991), the Commission also states its belief "that we have made sufficient point-to-point spectrum available for support of wired and wireless telecommunications systems for the present." The Commission's conclusion in 1991 hardly supports a present day finding that sufficient point-to-point spectrum is now and will in the future be available in light of the dramatic changes in the microwave environment, as described herein. Docket 92-9, WARC-92 and U.S. proposals for WRC-95 are only a few examples of the substantial and rapid changes experienced since 1991.

In fact, each of these proposed solutions is unworkable and fails to meet the critical needs of the microwave industry and the ancillary industries it serves. It is difficult to imagine, for example, how traditional microwave carriers would be able to apply for LMDS

spectrum themselves in the absence of service rules permitting microwave licensing in the 28 GHz band (which the Commission has not proposed),<sup>11</sup> and given the fact that applications for intermediate microwave links are, unlike proposed LMDS services, not subject to auction.<sup>12</sup> The Commission has not explained how, under its proposed rules, point-to-point microwave service providers could compete with LMDS for the same spectrum. If fixed service is to exist in the LMDS band, the Commission must refine the allocation to LMDS, as detailed in Section V below, to segregate the frequencies to be used for LMDS Backbone Links and permit sharing of the frequencies with fixed service users.

The Commission's suggestion that the needs of microwave providers may be served through geographic partitioning and/or spectrum disaggregation is flawed as well. Under the Commission's proposal, LMDS providers would be free to hoard unused frequencies, or to charge exorbitant rates for its use, having no regulatory obligation to provide spectrum to microwave service providers, or to charge a just and reasonable rate. Excess spectrum, if made available, would no doubt command an even higher premium in highly congested urban areas where it would be needed the most. The Commission's solution to leave microwave services at the mercy of the LMDS industry would artificially inflate costs and restrict availability of point-to-point microwave services where needed.

The Commission's partitioning/disaggregation proposal also rests on the assumption that LMDS and traditional microwave services are compatible. In fact, nothing in the record

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<sup>11</sup> In its *Third Notice*, the Commission has proposed to define a LMDS Backbone Link as "a point-to-point radio service link in a [LMDS] System that is used to interconnect [LMDS] Hub Stations with each other or with the public switched telephone network." Appendix B, Proposed Rule Section 21.2. By definition, however, a LMDS System is a fixed point to multipoint radio network. *Id.*

<sup>12</sup> Implementation of Section 309(j) of the Communications Act - Competitive Bidding (Second Report and Order), 9 FCC Rcd 2348, 2355-56 (1994).

supports this assumption. LMDS simply does not and cannot replace the fixed services upon which users depend for the conduct of their operations and businesses.

Finally, the Commission's suggestion that LMDS operators may lease spectrum to fixed point-to-point microwave providers does not square with the transfer of control provisions of Section 310 of the Communications Act. See, e.g., *Telephone and Data Systems, Inc. v. FCC*, 19 F.3d 42 (D.C. Cir. 1994); *Telephone and Data Systems, Inc. v. FCC*, 19 F.3d 655 (D.C. Cir. 1994). Nor may the Commission delegate its statutory licensing authority to third parties.

V. The Commission Should Dedicate 500 MHz of the 28 GHz Band to Point-to-Point Microwave Services on a Shared, Co-Primary Basis with FSS and MSS Services

For the reasons set forth above, TIA respectfully submits that the Band Segmentation Plan proposed by the Commission in its *Third Notice* ignores the pressing demand of traditional microwave services. In order to accommodate these needs, TIA urges the Commission to dedicate 500 MHz of the 28 GHz band (28.35 - 28.6 GHz and 29.25 - 29.5 GHz) to point-to-point microwave services on a shared, co-primary basis with FSS and MSS services. As set forth below, such a plan would, unlike that proposed by the Commission, serve the public interest without crippling the fixed microwave industry and ancillary service providers, and would not adversely affect the LMDS industry, nor the FSS and MSS industries, both of which have recognized the compatibility of their services with traditional microwave use

A. The allocation of a portion of the 28 GHz band for microwave use will serve the public interest

The Commission's authority to allocate spectrum flows from Section 303(c) of the Communications Act, 47 U.S.C. § 303(c), which requires that such allocations satisfy the

"public interest, convenience and necessity." In conjunction with this mandate, Section 7 of the Act, 47 U.S.C. § 157(a), requires the Commission to "encourage the provision of new technologies and services to the public." In the *Second Notice* of this proceeding, the Commission indicated that it based its allocation of the 28 GHz band on a variety of public interest factors, including economic growth potential, spectrum efficiency, potential for maximizing interconnection of U.S. telecommunications services and facilities, and other non-economic factors. The shared allocation of a portion of the 28 GHz band by fixed microwave and FSS services would serve these important public interest objectives.

Promotion of New Technologies. As noted above, 28 GHz microwave facilities can and were intended to provide essential backbone services and intermediate links for PCS and other emerging mobile telecommunications providers. It would be illogical for the Commission to promote such industries, on the one hand, while reducing the amount of spectrum available to meet their interconnection service needs, on the other hand.

Protection of Existing Industries. As noted above, in order to make spectrum available for PCS networks, the Commission has required incumbent 2 GHz microwave licensees to relocate to other facilities. It has also required present microwave users of the 12 GHz band to make way for DBS. Such microwave licensees currently use their authorizations to provide service to public safety bodies and various industries essential to the national welfare and they must have spectrum to relocate. As discussed above, they have lost or are losing the availability of the upper 6 GHz, 11 GHz, 18 GHz and 38 GHz. Partial shared allocation of the 28 GHz band is essential to accommodate the needs of such licensees.

Competition. 28 GHz microwave facilities will also provide an attractive wireless local access alternative. Both the Commission and Congress have recognized the benefits

of such competition at the local level, and have encouraged the development of this emerging industry. A vital key to this growth will be the availability of high capacity radio spectrum to provide critical interconnecting links for competitive access providers, and for local area networks.

Investment. Allocation of a portion of the 28 GHz band will promote short-term and long-term investment due to a projected increase in demand for mobile telecommunications and wireless local access services. As Harris and DMC have advised the NRMC and the Commission, the export by U.S. manufacturers of radio communications equipment is tied to international spectrum allocation. Most countries look to the ITU's Radio Regulations and Standards Bureau for guidance on equipment design. The 28 GHz band is coming into operational use for terrestrial fixed services in many countries already, particularly in Europe, and service providers there have asked U.S. microwave equipment manufacturers to develop equipment and systems for use. U.S. manufacturers, however, have been waiting for the band to be channelized by the Commission and opened for use domestically so that radios can be built with strong export potential. By allowing U.S. manufacturers to produce uniform, and therefore less costly domestic and export product lines, a major contribution could be made to the U.S. balance of trade and additional employment for U.S. workers.<sup>13</sup> The Commission's proposal, if implemented, will have a detrimental effect on export of U.S. microwave equipment to markets where U.S. manufacturers have so far been very successful global competitors.

Spectrum Efficiency. Unlike the band segmentation plan proposed by the Commission, the co-sharing of frequencies sought herein would allow the needs of multiple

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<sup>13</sup> NRMC No 33

users to be met, including those of point-to-point services. It would also be consistent with the long standing Commission practice and statutory requirement of maximizing effective use of the spectrum.

B. The allocation of a portion of the 28 GHz band to traditional microwave licensees will not adversely affect the FSS, MSS, or LMDS industries

Coordination procedures between earth stations and terrestrial fixed stations are well established and have been successfully practiced since the 1960s.<sup>14</sup> Recognizing this reality, the Boeing Company, Hughes Communications, Inc., Teledesic Corporation and Texas Instruments, Inc. have jointly supported a proposal permitting the sharing of a portion of the 28 GHz band by fixed microwave services.<sup>15</sup> Since 1979, ITU radio regulations have likewise allocated the 28 GHz band to fixed, satellite, and mobile services on a co-primary basis.<sup>16</sup> By contrast, the record in this proceeding is devoid of any support regarding the ability of LMDS and fixed point-to-point microwave frequencies to share the same spectrum (except with regard to LMDS backbone links, as discussed below). The proposal set forth herein for the sharing of spectrum by fixed, FSS and MSS service providers is consistent with long established Commission and international policies recognizing the feasibility of such co-sharing, and would not impede or interfere with the operations of LMDS.

VI. Shared use with LMDS

The record in this proceeding makes clear and the Commission has concluded that

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<sup>14</sup> See, e.g., Article 11 and Appendix 28 of the International Radio Regulations and Part 25 of the Commission's rules and regulations, §§ 25.251 - 25.256.

<sup>15</sup> Further Comments of The Boeing Company, Hughes Communications, Inc. Teledesic Corporation and Texas Instruments in this proceeding, May 12, 1995.

<sup>16</sup> NRMC/69.1 ("Non-Technical Items"), dated September 20, 1994.

LMDS will require point-to-point radio service links to interconnect hub stations with each other or with the public switched telephone network. *Third Notice*, Appendix B, Proposed Rule Section 21.2, Local Multipoint Distribution Service Backbone Link. While the shared use of the LMDS spectrum used for point-to-multipoint service is not practical, that same barrier does not apply to the shared use of spectrum by point-to-point backbone links and traditional point-to-point links. The Commission can meet this LMDS need and the need of fixed users by allocating a portion of the 1,000 MHz proposed to be allocated to LMDS specifically for point-to-point service on a co-primary shared use by LMDS backbone links and fixed services. An allocation of two channels of 150 MHz (28.2 - 28.35 GHz and 29.1 - 29.25 GHz) would be reasonable to meet LMDS needs. It is clear that while LMDS service may grow into one of national scope, many areas of the country will remain unserved or require less spectrum for service. Further, digital LMDS will require less spectrum than the initial analog systems. It is not in the public interest to allow under-utilized LMDS spectrum to remain unavailable for alternative uses. Further, the shared use of a small portion of the significant amount of spectrum allocated for LMDS would foster greater efficiency of use, in accordance with the directive of the Communications Act.

## VII. Conclusion

Current demand for short-haul point-to-point microwave fixed service is growing while the Commission in this proceeding proposes to exclude such service from the 28 GHz band. The record in this proceeding clearly supports the sharing of a portion of the 28 GHz band, on a co-primary basis, by fixed microwave service with FSS and MSS (specifically, the 500 MHz 28.35 - 28.6 GHz and 29.25 - 29.5 GHz) and with LMDS Backbone Link



Service (specifically, the 300 MHz 28.2 - 28.35 GHz and 29.1 - 29.25 GHz). The public interest requires no less.

Respectfully submitted,

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